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## **Infectious upper respiratory complex: feline herpesvirus, feline calicivirus, and *Chlamydia psittaci*** *Infectious upper respiratory infection, URI*

### **Affected Animals:**

Young kittens, unvaccinated adult cats, and cats kept in multiple-cat households or catteries. The diseases are usually worse in young kittens and immunocompromised animals.

### **Overview:**

Upper respiratory infections are a common illness in felines, especially young kittens. Highly contagious to other cats, upper respiratory infections typically are accompanied by "cold-like" symptoms such as sneezing, discharge from the nose, and lack of appetite. The cause of feline respiratory infections is usually viral. Generally, kittens are more severely affected by these infections than adult cats.

Treatment of upper respiratory disease is aimed at supporting the nutritional and fluid requirements of the kitten. Medications will alleviate some of the symptoms but do not eliminate the virus. Fortunately for most cats, the signs of disease last for only five to seven days. However, even after a cat has recovered from the disease, it may continue to carry and shed the virus for months to years. Vaccines are available to protect cats and kittens from upper respiratory disease, and are recommended especially for households and housing facilities containing multiple cats.

### **Clinical Signs:**

Clinical signs include anorexia, depression, fever, and naso-ocular, or nose and eye discharge. Some cases of upper respiratory infections will result in sneezing, coughing, hypersalivation, an abnormal or hoarse meow or lack of vocalization, conjunctivitis, or inflamed eye membranes, and ulceration of the nose or mouth.

### **Symptoms:**

See clinical signs.

### **Description:**

Feline infectious respiratory diseases are the upper respiratory infections that are most commonly associated with two viruses, feline herpesvirus, also known as feline viral rhinotracheitis, and feline calicivirus. A possible non-viral cause of an upper respiratory infection is *Chlamydia psittaci*, although this organism is associated more frequently with persistent conjunctivitis.

Upper respiratory infections are highly contagious and can be spread from one cat to

another through sneezing, coughing, or via objects contaminated with saliva or secretions, such as food and water bowls. Once exposed to infection, the animal usually will show signs of disease within one to five days. Generally, the symptoms are more severe in young kittens.

Most upper respiratory infections improve on their own within five to seven days. Unfortunately, about 80 percent of cats that recover from these viruses remain carriers of the disease for months to years. Feline calicivirus can be shed constantly for months to years. Typically, times of stress result in the shedding of the feline herpesvirus and mild clinical signs in the carrier cat. For example, the nursing mother cat that can infect her kittens with herpesvirus during the nursing period.

### **Diagnosis:**

A diagnosis of viral respiratory infection typically is based on the history and physical exam of the kitten or cat. Specific tests to ascertain the specific causative virus are not performed routinely unless there is a disease outbreak in a large group of cats housed together.

If the cat is affected severely, the examining veterinarian may elect to perform blood tests. Serology tests for feline leukemia virus, or FeLV, and feline immunodeficiency virus, or FIV, should be performed in cats with recurrent episodes of disease. Cats that fail to improve after two weeks, and vaccinated adult cats that have severe respiratory symptoms, also should be evaluated for FeLV and FIV.

In order to establish a definitive diagnosis, on infrequent occasions the veterinarian may perform other tests, such as viral inclusion body tests of conjunctival biopsies or scrapings, and direct immunofluorescence of nasal swabs for virus-infected cells. Virus isolation from cell cultures can be achieved by taking swabs of the affected areas, and serology can evaluate rising antibody titers.

### **Prognosis:**

The prognosis is good. Most felines will recover fully from the clinical signs within five to seven days. The prognosis in cats housed together in groups is dependent upon the presence of carrier states and re-infections. It is possible for chronic symptoms of nasal and sinus inflammation to persist with feline herpesvirus infection if the nasal tissues and underlying bone are severely damaged. Cats with this condition sometimes are called "chronic snufflers." A chronic eye discharge can occur secondarily to feline herpesvirus or chlamydial conjunctivitis.

### **Transmission or Cause:**

Direct contact with discharges from the eyes, nose, or mouth of the infected cat will likely result in infection. Contaminated objects can be a significant source of infection for up to 24 hours with feline herpesvirus and for up to 10 days with feline calicivirus. Items such as cages, food and water bowls, as well as human hands and clothing can be contaminated with respiratory secretions. Transmission also can occur when the infected cat sneezes or coughs and thus aerosolizes the virus so that it can be inhaled by other felines.

### **Treatment:**

Because no antiviral medications are presently available, treatment is primarily supportive. The veterinarian will make specific recommendations based on the cat's symptoms and the severity of illness. The infected animal should be kept warm and quiet.

Some treatments may include cleaning the discharges from the nose and eyes, offering highly odoriferous and palatable foods, and coaxing the cat to eat and drink. Some kittens may need to be fed via a syringe. Humidifying the airway can be accomplished by taking the cat into a bathroom filled with steam from a hot shower. The veterinarian may prescribe antibiotics to prevent secondary bacterial infections. Eye ointments and nasal decongestants may be indicated as well.

Most felines with upper respiratory infections are treated on an outpatient basis to decrease the possibility of contaminating the veterinary hospital. Severe cases of respiratory infections may require hospitalization in an isolated section of the veterinary hospital. Kittens or cats with significant clinical signs may require subcutaneous or intravenous fluids and oxygen therapy for pneumonia or low blood oxygen levels. Some cats may require more advanced feeding techniques until their appetites return.

**Prevention:**

Prevention of feline herpesvirus, feline calicivirus, and *Chlamydia* can be enhanced greatly by the proper use of vaccinations against these diseases. Immunization offers protection from clinical signs of disease but not infection. Therefore, even well-vaccinated cats can be chronic carriers of a virus.

For prevention of the diseases in groups of cats, additional control measures are recommended. Routine vaccinations should be performed on all cats, and new cats should be vaccinated and isolated for three weeks. In addition, owners should maintain thorough hygiene techniques, avoid overcrowding, and isolate suspected carriers from the rest of the population.